

NON-FINITE CLAUSES IN THAI¹

Pornsiri Singhapreecha
Thammasat University
pornsiri.s@litu.tu.ac.th

Abstract

This study investigated certain properties of non-finite clauses in Thai, that is, matrix clause predicates, clause markers, and modal auxiliaries in the clausal complements. Two types of resources were employed. The first one was constructed based on the obligatoriness and optionality of *thîi cà?*, a marker for irrealis complements (Singhapreecha 2010). The second database was obtained from a translation into Thai from De Jonge's (1998) Spanish subjunctives. Three hypotheses were formulated. Firstly, *thîi cà?* is obligatory with matrix predicates neutral to irrealis mood, optional with those implicitly irrealis, and absent with experiential clauses. Secondly, predicates taking (purposive and imperative) subjunctives occur in the absence of tense and modal auxiliaries, and definitive elements are not accommodated in hypothetical clauses. Thirdly, with predicates taking indicatives, tense/aspect markers are likely, but not modals of possibility. Data from a series of questionnaires conducted with Thai informants confirmed the first and second hypotheses. The third hypothesis was partially confirmed. While tense markers were favored as predicted, modals of moderate to weak obligation/possibility were acceptable. This study suggests, in respect to modality and indicatives, a sense weaker than certainty be allowed in evaluating a past or hypothetical event.

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ISO 639-3 codes: tha, spa

1. Introduction

In Thai, *thîi* has been established as a complementizer introducing factive (non-assertive) clauses, distinct from *wâa*, which marks assertive clauses (Ekniyom (1982), Hoonchamlong (1991)). In a more recent study by Prasithrathsint (2009), *thîi* and *wâa* are approached from a cognitive view; *thîi* occurs commonly with emotive verbs while *wâa* appears with communicative verbs.² Cognitive classification notwithstanding, the property of *thîi* as denoting a sense of fact generally holds when *thîi* appears by itself; however, when *thîi* forms a

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² Prasithrathsint (2009) investigated instances of *thîi* and *wâa* that co-occurred with matrix verbs in an approximately three-million-word corpus of contemporary Standard Thai. Three complementizers which were chosen included *thîi*, *wâa*, and *hâj*. Employing a cognitive approach, Prasithrathsint (2009) classifies *thîi*, *wâa*, and *hâj* as complementizers taking *emotive*, *communicative*, and *directive* verbs, respectively. While such a classification is worth consideration, I continue to present *thîi* in the sense of denoting facts, as it is a means through which the functionally neutral instance of *thîi* could be derived prior to its formation with *cà?*.

compound with *cà?* (an irrealis particle), *thîi cà?* assumes a new role. It becomes an infinitive marker introducing a clause with hypothetical tense (cf. Diller (2001), Jenks (2006), Singhapreecha (2010)). Such an effect is quite puzzling. While the resulting hypothetical reading is conceivable (via *cà?*), the presence of *thîi* is not easily justified (as *wâa*—expressing a less committing sense—would suffice). This issue aside, evidently, *thîi* in *thîi cà?* has lost its factual sense and assumes a purely functional status, that is, a marker for complementation.

That *thîi* is functionally neutral can be understood in comparison with the Spanish complementizer *que*. In Spanish, *que* appears across virtually all types of clausal complements (including assertive and non-assertive that are marked differently in Thai). In this respect, embedded clauses in Spanish are classified not on the basis of complementizer form, but rather subjunctive or indicative mood. Categorizing subjunctives versus indicatives in Spanish has long been debated (Hooper (1975), Klein (1975), De Jonge (1998)). Among these, De Jonge's (1998) hypotheses can be potentially generalized to relevant cases in Thai. According to him, a subjunctive mood involves the speaker's use of an alternative to the occurrence relevant to the context associated with the matrix verb, whereas indicative mood involves the speaker's assertion of the occurrence.

The present study has two objectives, both of which involve non-finiteness. Firstly, it investigates the role of *thîi cà?*, which introduces non-finite clausal complements, with a dataset that I constructed and subsequently surveyed to justify its status. Secondly, to obtain a wider range of data of the non-finite type, I constructed another database consisting of Thai counterparts of De Jonge's Spanish dataset. The constructed data and the data obtained from the translation of De Jonge's corpus were used to formulate hypotheses on typical properties of Thai non-finite clauses. The paper is organized in a way to accommodate tests of hypotheses as follows.

Section 2 gives a general view of Thai complementation and clause markers, featuring *wâa* and *thîi*, which mark assertion and non-assertion. Section 3 introduces *thîi cà?* and the fact that *thîi* in *thîi cà?* does not convey a factual sense but serves as a functional item, associated with a hypothetical tense. In addition, it brings to attention the Spanish complementizer *que*, which shows up across indicatives and subjunctives, parallel to *thîi*, and it illustrates De Jonge's (1998) means to a distinction between the two moods. Section 4 illustrates the resources and presents classification of data—infinitives, subjunctives, and indicatives. Section 5 presents three hypotheses based on the data, the methodology of testing the hypotheses, and the results, followed by the conclusion and final remarks in Section 6.

2. Wâa and Thîi: Assertive and Non-Assertive (Factive) Clauses

Thai marks assertive and non-assertive clauses using two primary complementizers, *wâa* versus *thîi*, respectively. There are restrictions on the kind of matrix verbs and the kind of clausal complements in which the two complementizers can appear. As noted in Jenks (2006), verbs of speech and psych predicates tend to select *wâa*, while stative verbs of evaluation and emotion select *thîi*. In terms of their complements, assertive clauses, those selected by *wâa*, denote the propositions assumed to be true by the speakers (cf. Eknaiyom 1982). Unlike assertive clauses, non-assertive clauses, those selected by *thîi*, refer to propositions which are considered to establish facts or events with which both the speaker and the hearer can associate their experience. As fact is regarded as involving experience, non-assertive clauses in Thai can be considered along these lines. I will assume a strong affinity between fact and the past experience that the speaker and the hearer share and use the terms non-assertive and factive clauses interchangeably.

See minimal pair examples in (1) and (2). Sentences (1) and (2) feature *think* versus *regret*, representing psych predicates and stative verbs of emotion as discussed by Jenks (2006).

- (1) *Tan khít wâa May cà? laa?ðək càak ɲaan*
 Tan think COMP May will resign from job
 'Tan thinks that May will resign from her job.'
- (2) *Tan sīdaaɲ thîi May laa?ðək càak ɲaan*
 Tan regret COMP May resign from job
 'Tan regretted that May resigned from her job.'

In (1), *wâa* introduces assertion as the clause involves a future prediction, a proposition assumed by *Tan* to be true. In (2), *thîi* introduces non-assertion/fact, May's resignation, an event established as fact and assumed to be shared by the speaker and the hearer of this sentence. The fact that *sîadaaj* takes a clause marked by *thîi* can be viewed in a parallel fashion with English *regret*, a factive predicate in Kiparsky and Kiparsky's (1970) sense, taking gerundial phrases.

3. *Thîi cà?* as Infinitive Marker

The property that *thîi* marks non-assertive/factive clauses holds when it appears by itself. However, when *thîi* forms a compound with *cà?*, *thîi cà?* assumes a new role. It becomes an infinitive marker introducing a clause with a hypothetical tense (cf. Diller (2001), Jenks (2006), Singhapreecha (2010)).

That *cà?* is closely associated with an unreal, desirable situation, is clear from relevant literature. While the desiderative sense of *cà?* is realized, it is quite unanimously classified as a modal auxiliary, namely, a future tense marker or a particle denoting intention (cf. McFarland, 1944; Noss, 1964; and Iwasaki and Ingkaphirom, 2005). Only recently has there been an argument for its status as a marker of infinitival clauses, another crucial function. To this end, Diller (2001), Jenks (2006) and Singhapreecha (2010) ascribe *cà?* to a complement marker when attached to *thîi*, i.e. *thîi cà?*. Jenks (2006) remarks that *cà?* is optional in control infinitives but obligatory when *thîi* appears. Jenks' (2006) remark is further examined in Singhapreecha (2010), who found evidence which indicates that *cà?* is not always optional, but obligatory with a verb of desire in Thai.³ Evidence aside, what suffices here is that *thîi cà?* is a marker for infinitival clauses, and its presence and absence will be discussed in detail in Section 4.1. Prior to that, as control predicates co-occur with *thîi cà?*, there follows a brief discussion as a background,

3.1. Control and PRO

Control constructions refer to constructions in which the complements of the matrix predicates have no overt subjects. These empty subjects are called PROs in the Government and Binding theory (Chomsky 1981). In a standard assumption (as developed in Haegeman 1994), there are two major types of control predicates: optional and obligatory. In an optional control sentence, there is no NP argument that PRO is dependent on within the sentential domain that contains it. This instance of PRO is termed arbitrary PRO or PROarb as demonstrated in example (3).

(3) [PRO to approve this project] is ridiculous.

As (3) illustrates, PRO can be interpreted as the pronoun *one*, or a person/persons in the context.

In sentences with obligatory control predicates, the referents of PROs are interpreted as the main clause subjects or objects. Whether PROs are related to subjects or objects can be determined by verb classes. In English, *try* and *promise* are *verbs of subject control*, that is, those requiring PRO to be bound by main clause subjects, while *tell*, *instruct*, and *allow* are *verbs of object control*, namely, those requiring PRO to be bound by main clause objects. Sentence (4) below contains an instance of PRO that is bound by the main clause subject *Tan*.

(4) Tan wants [PRO to leave the building]

Note that *want* can also take an infinitival clause with an overt NP. Although there are other verbs in addition to *want* that select infinitival complements, I continue to use *want* as a model for Thai control infinitives as it has been investigated in Jenks (2011) and Singhapreecha (2010).

3.2. Thai Control Infinitives

Pingkarawat (1989), Hoonchamlong (1991), Singhapreecha (2010), and Jenks (2011) claim that there exists a class of control predicates in Thai. This class can be represented by the verb *jàak* "want," as shown in (5) below. In (5), the main clause verb *jàak* can optionally take *cà?* or *thîi cà?*. In respect of meaning, with *cà?*,

³ There are some control verbs such as *pràathanāa* which selects a clause headed by *cà?*. Thus, it is not always the case that *cà?* is optional with control verbs.

the desiderative sense is overtly expressed. When *thîi cà?* is present, according to native speakers' intuition, there is additional specificity of the clausal complement and the entire sentence implies formality.⁴

- (5) *Somsak jàak [((thîi) cà?) thamṇaan naj UN]*
 Somsak want COMP INF work in the United Nations
 'Somsak wants to work for the United Nations.'

In terms of the status of infinitival clauses, that (5) contains a control verb with an infinitival complement is justified on the basis that neither the progressive aspect marker *kamlan* nor the pronoun *kháw* "he" can appear in the infinitival complement. See (5') and (5'') below.⁵

- (5') *Somsak jàak [((thîi) cà?) *kamlan thamṇaan naj UN]*
 Somsak want COMP INF PROG work in the United Nations
 (5'') *Somsak jàak [((thîi) cà?) *kháw thamṇaan naj UN]*
 Somsak want COMP INF PROG work in the United Nations

As aspectual markers are used in finite clauses, the ungrammaticality of (5') arises as a result of the insertion of the progressive marker. In (5''), since PRO occupies the subject position of the clausal complement, this position is unavailable for a pronoun to fill, and consequently, the presence of *kháw* results in ungrammaticality. The fact that aspectual elements and pronouns are disallowed suggests that the clausal complement is infinitival.

In terms of formal analyses, as *thîi cà?* is not available in Pingkarawat (1989) and Hoonchamlong (1991), but in Singhapreecha (2010) and Jenks (2011), I will outline the latter studies' analyses as a background on the current state of the syntax of infinitival complements in Thai.

Singhapreecha (2010) develops a syntactic-semantic analysis for control infinitives largely with *thîi cà?* such as (5) above. Incorporating Kayne's (2000) approach to *di*-clauses in Italian, Singhapreecha accounts for a strong affinity between *thîi* and a hypothetical tense by means of remnant movement of VP, in which the infinitive, introduced by *cà?*, is contained. She proposes the presence of a *Thîi* Phrase (THP) and MIP (Mood (Irrealis) Phrase) to account for the word order pattern and checking of nominal and irrealis features.

In respect to Jenks' (2011) approach, he assumes that control verbs select a CP whose head is occupied by a relative complementizer *thîi*. Jenks proposes that PRO is base-generated in the subject position of the IP and *cà?* occupies the I head. He utilizes a full CP (embedding the previously mentioned IP) whose head is filled by *thîi* as a VP complement. He argues that PRO raises from Spec, IP into Spec, CP to be in the specifier-head domain, where the uninterpretable nominal [uN] features, claimed to be associated with *thîi*, can be checked. The main difference between the two approaches involves the remnant movement of infinitives for checking of nominal features (across Thai and Romance) presented in Singhapreecha (2010), not in Jenks (2011).

What I want to establish here is that the presence of infinitival clauses in Thai has been confirmed, and at least two studies (Singhapreecha 2010 and Jenks 2011) address the presence of *thîi cà?* as an infinitive marker and offer accounts of how infinitival clauses can be derived syntactically. In the remaining part of this paper, as only overt elements were examined, I will leave aside PRO and consider Thai infinitival clauses to be those headed by *thîi cà?* in the absence of modal and tense elements and to be selected by matrix predicates such as *jàak*, as shown in (5) above.

3.3. From *Thîi* to *Que*

When one reconsiders the semantics of the compound *thîi cà?* in (5), one finds *thîi cà?* as a marker for hypothetical tense puzzling. Although the resulting hypothetical reading is conceivable by means of *cà?*, the

⁴ Another matrix verb *tāṇcaj* 'intend' behaves similarly to *jàak* in that it can optionally take *cà?* or *thîi cà?*. It behaves differently from *jàak* as *tāṇcaj* can take *wāa* with an overt subject in the clausal complement. I thank a JSEALS reviewer for this suggestion.

⁵ To distinguish instances of *cà?* marking infinitival clauses from those denoting future mood, they are glossed as INF and *will*, respectively.

presence of *thîi* is not easily justified, as *wâa*—expressing a less committing sense—would suffice. Given data such as (5), it is possible that *thîi* in *thîi cà?* has lost its factual sense and assumes a purely functional status, a marker for complementation. The functionally neutral sense of complementation (conveyed, for example, by *thîi*) can be tied in with the Spanish complementizer *que*.

3.3.1. Thai and Spanish Assertion and Non-Assertion

In Spanish, *que* appears across virtually all types of clausal complements (including assertive and non-assertive). (6) and (7) (the same sentences as (1) and (2)) illustrate such a comparison between Thai and Spanish. For clarity's sake, the grammatical English translation appears prior to the Thai and Spanish sentences, followed by the glosses.

- (6) 'Tan thinks that May will resign from her job.'
- | | | | | | | | | |
|-----|--------|------|-----|-------------|------|-----|---------|------|
| Tan | khî | wâa | May | cà? | laa? | ðək | càak | ŋaan |
| Tan | piensa | que | May | renunciará | a | su | trabajo | |
| Tan | thinks | COMP | May | will.resign | from | her | work | |
- (7) 'Tan regretted that May resigned from her job.'
- | | | | | | | | | |
|-----|---------|-----------|------|------|------------|------|------|---------|
| Tan | sĭadaaj | thîi | May | laa? | ðək | càak | ŋaan | |
| Tan | se | dio pena | que | May | renunciara | a | su | trabajo |
| Tan | self | gave pity | COMP | May | resigned | from | her | work |

Sentences (6) and (7) contain assertive and non-assertive clauses, respectively. As noted in Section 1, the assertive clausal complement is marked by *wâa* while the non-assertive clausal complement is marked by *thîi*. In Spanish, both assertive and non-assertive clausal complements are introduced by *que*.

As is evident in Thai, complementizer forms and clause types are selected by predicates; however, in Spanish, clausal complements, as indicated by (6) and (7), cannot be classified on the basis of complementizer form. They are customarily divided by mood: subjunctive or indicative. According to Trask (1993), the indicative mood is used when the speaker believes a statement he/she utters to be true, whereas the subjunctive mood is used in some languages such as Spanish to express remoteness, unreality and possibility.

Categorizing subjunctives versus indicatives in Spanish has long been debated (Hooper, 1975; Klein, 1975; De Jonge, 1998). This notwithstanding, De Jonge's (1998) work is most useful as a basis for an investigation with Thai. He makes available a dataset including both subjunctive and indicative clauses and his hypotheses have the potential to generalize to a wide range of data. For these reasons, De Jonge's (1998) criteria has been adopted for Spanish subjunctives and indicatives to examine hypothetical and non-hypothetical clauses in Thai.

Hereafter, I generalize the terms subjunctives and indicatives in De Jonge's dataset to their Thai counterparts. Although Thai does not have subjunctive morphology like Spanish does, the presence of the subjunctive mood in Thai is viable. In Jenks' (2006) own words, "The aspectual particle *cà?* generally carries a semantic meaning of either uncertainty or future eventhood in finite clauses (something like a subjunctive). However, its use in these specific structures is selected by the predicates, though it is optional." Inspired by Jenks' observation and the presence of *cà?* in the data to be revealed, I take a step forward, while subjunctives in Thai remain arguable, by presenting the notion, and classifying clauses of this type, by the criteria considered to be compatible with those of the Spanish counterparts. As the investigation of subjunctives cannot be independent of indicatives, in forming the hypothesis for indicatives, I observed a few Thai indicative clauses translated from Spanish and extrapolated their tendency from these examples.

3.3.2. De Jonge's Subjunctive vs. Indicative

With respect to classifying indicatives versus subjunctives, according to De Jonge, a subjunctive involves the speaker's remark of an alternative to the occurrence expressed by the verb, whereas an indicative involves the speaker's assertion of the occurrence without an alternative. See De Jonge's relevant examples of subjunctive and indicative complements in (8) and (9), reproduced from his (6) and (7). Both display verbs of saying.

- (8) *Ya te dije que te la llevas*
 Already you 1s.told that you it (you) take (present subjunctive)
 ‘I already told you that you should take it with you.’

- (9) *Porque me dijiste que no había nada en la gaveta*
 Because me 2s.told that no there.was nothing in the drawer
 ‘Because you told me there was nothing in the drawer.’

In the situation presented in sentence (8), a carpenter made a birdcage for a boy without his father’s permission. The boy’s father told the carpenter to take the birdcage with him, though he refused. The clause [te la llevas] can be considered a desirable alternative, calling for a subjunctive.

In the situation of sentence (9), a man stole a set of snooker balls from a bar but did not take anything from the drawer as there was nothing there. His wife thought that he had found some money in the drawer and lied to her about the drawer being empty. She reported back his expression ‘no había nada en la gaveta’. In this respect, the man made an assertion and there were no other alternatives, corresponding to De Jonge’s indicative sense.

Turning to Thai, based on De Jonge’s data, two sets of questions are in order.

1. What matrix predicates and clauses in Thai correspond to Spanish matrix predicates and clauses?
2. Are they introduced by markers? If so, what are they? How do they behave?

4. Types of Thai Clauses: Constructed and Spanish-Based Data

To answer the above questions, I developed a database incorporating my constructed examples and De Jonge’s corpus, the details of which are presented in Sections 4.1 and 4.2. These data were checked for grammaticality, classified, described, and summarized (to be discussed in Sections 5 and 6).

4.1. Constructed Data: Thai Infinitives

I constructed this dataset focusing on the obligatoriness and optionality of *thîi cà?*. My data construction started from my query on Jenks’ (2007) note that *cà?* is optional in control constructions but obligatory when *thîi* appears, as mentioned earlier in Section 3. In this respect, *thîi cà?* according to Jenks is optional in control infinitives. Although *thîi cà?* is usually addressed in connection with control infinitives, where it is optional, the use of *thîi cà?* is not restricted to control infinitives. It appears in other clause types as well, and interestingly, in contexts where it is obligatory. Since the obligatoriness of *thîi cà?*, which is significant for non-finiteness in Thai, has not been addressed in the literature, I checked the status of *thîi cà?* in a variety of clauses and report my observations in this section.

There are two classes of *thîi cà?* related predicates: those which require the marker *thîi cà?* (illustrated in (10a) and (11a)) and those which do not (in (12)).

- (10) a. *Somsak sabajcaj thîi cà? thamjaan kàp raw*
 Somsak comfortable COMP INF work with us
 ‘Somsak feels comfortable working with us.’
- b. **Somsak sabajcaj thamjaan kàp raw*
 Somsak comfortable work with us
- c. *Somsak sabajcaj naj kaan thamjaan kàp raw*
 Somsak comfortable in NMLZ work with us
 ‘Somsak feels comfortable working with us.’

- (11) a. *Somsak lïklïaŋ thîi cà? tòp khamthăam*
 Somsak avoid COMP INF answer questions
 ‘Somsak avoids answering questions.’
- b. **Somsak lïklïaŋ tòp khamthăam*
 Somsak avoid answer questions
- c. *Somsak lïklïaŋ kaan tòp khamthăam*
 Somsak avoid NMLZ answer questions
 ‘Somsak avoids answering questions.’

Sentences (10a) and (11a) illustrate a predicate selecting a hypothetical tense. As shown in both sentences, the clauses that follow *sabajcaj* and *lïklïaŋ* are introduced by *thîi cà?*.⁶

The omission of *thîi cà?* in (10b) and (11b) results in ungrammaticality. If the predicate *sabajcaj* selects a clause expressing an experiential sense, a PP follows it, as shown in (10c). Similarly, if the predicate *lïklïaŋ* selects an experiential clause, a nominalized VP follows it, as shown in (11c).

Structurally, the *thîi cà?* clause that follows *sabajcaj* is different from the one that follows *lïklïaŋ*. The former is an adjunct, a phrase that is independent of the phrase, i.e. the VP *sabajcaj*, with which it associates. The latter is a complement, a phrase dependent on the head, i.e. the V head *lïklïaŋ*, in this particular case.

Sentence (12), repeated from (5), shows the optionality of *thîi cà?*. As noted in Section 2.2, the presence of *thîi cà?* has a semantic effect, adding a sense of specificity to the infinitival complement. Relevant to this point is Singhapreecha’s (2010) observation about a slight meaning difference between (12a) and (12b). According to her, an irrealis sense is readily available with the matrix verb *jàak*; therefore, *thîi cà?*, an infinitive marker, is optional; when *thîi cà?* co-occurs with *jàak*, it does not give rise to the indication of an unrealized situation, but emphasis on it. Singhapreecha further speculates that this emphatic reading could result from the presence of *thîi*, the instance that marks relative clauses. As relative clauses enable a contrastive effect in the sense that one entity is singled out from a range of candidates, this contrastive sense might carry over to *thîi cà?*. In the presence of *thîi cà?* in (12b), the infinitival clause *to work for the UN* presumably implies a contrast with *to work for other local organizations*, a plausible extended reading, given that the UN is considered a famous, widely recognized international organization. In the absence of it, *jàak* suffices as an irrealis entity and a contrastive reading does not arise.

- (12) a. *Somsak jàak thamŋaan naj UN*
 Somsak want work in the UN
 ‘Somsak wants to work for the UN.’
- b. *Somsak jàak thîi cà? thamŋaan naj UN*
 Somsak want COMP INF work in the UN
 ‘Somsak wants to specifically work for the UN.’

Optionality of *thîi cà?* aside, if *thîi cà?* is connected with irrealis, one expects that it should not occur when a predicate requires an experiential clause. This statement is illustrated in (13) below. In the context of (13), the experiential sense can be expressed as a bare verb phrase. If *lăək* ‘quit’ can only take an experiential phrase, as in (13b), the presence of *thîi cà?* in (13a) should result in ungrammaticality. A caution to (13a) is in order before hypothesis formulation. As quitting smoking can be regarded as a gradual change. Some speakers might accept (13a), given that *thîi cà?* makes this sense available.⁷

⁶ Note that English *avoid* is different from Thai in that it can only take gerundial phrases, which denote experiential and not hypothetical aspect. The Thai fact here, thus, can broaden a perspective that might be customarily associated with languages widely discussed in the literature such as English.

⁷ The issue of gradual and abrupt changes that are associated with the presence and absence of *thîi cà?* will be discussed in detail in Section 5.5.1.2. The findings interestingly revealed a generational difference; the undergraduate informants accepted *thîi cà?* in experiential contexts more than the graduate and faculty informants.

- (13) a. *Somsak lăək thîi cà?* *sùup burîi*
 Somsak quit COMP INF smoke cigarettes
 ‘Somsak quit [to smoke].’
 b. *Somsak lăək sùup burîi*
 ‘Somsak quit smoking.’

At this point, a potential hypothesis is that matrix predicates that are neutral to irrealis mood require *thîi cà?*, while those that are inherently irrealis do not; *thîi cà?* cannot appear with those requiring experiential complements. See Table 1 for data on three classes of predicates in Thai.

Table 1: *Classes of matrix predicates with and without thîi cà?*

Class	Predicate	English Glosses	Type of Clause
1.Thîi cà? (obligatory)	nêcaj	certain	adjunct
	campen	necessary	adjunct
	sabajcaj	feel comfortable	adjunct
	ŋâaj/jâak	easy/difficult	adjunct
	pen pajmâjdâaj	impossible	adjunct
	túuntên	be excited	adjunct
	liiklîaŋ	avoid	complement
2.Thîi cà? (optional)	waanphêen	plan	complement
	lûak	choose	complement
	chôop	like	complement
	klâa	dare	complement
	luum	forget	complement
	sôncaj	be interested in	adjunct
	tòkloŋ	agree	adjunct
	jindii	glad	adjunct
3.Thîi cà? (absent)	jùt	stop	complement
	lăək	quit	complement

Given the data in Table 1, it seems that the obligatory presence of *thîi cà?* is independent of the status of adjunct or complement clause. In other words, the *thîi cà?* element is obligatory across complements and adjuncts (Class 1) and optional in the same fashion (Class 2).

Two further notes are in order. Firstly, when a hypothetical tense is selected, three predicates taking adjuncts (i.e. *tòkloŋ*, *jindii*, and *sôncaj*) require *cà?*. Secondly, across Classes 1 and 2, *liiklîaŋ*, *chôop*, *klâa*, and *luum* require complements of either experiential or hypothetical type, the latter of which exhibits *thîi cà?*.

If we allow *cà?* as an alternate of *thîi cà?*, as the presence of *cà?* entails the plausible presence of *thîi cà?* (noted in Section 3), we can obtain a generalization which can account for the obligatory presence of *thîi cà?* straightforwardly.⁸ This hypothesis can thus be stated as follows. *Thîi cà?* (or *cà?*) is obligatory with hypothetical adjuncts. With respect to complements, predicates that are inherently irrealis optionally take *thîi cà?*. Predicates neutral to irrealis require *thîi cà?* if they select a hypothetical tense. *Thîi cà?* is absent with predicates taking experiential phrases exclusively.

I have chosen *campen* and *sabajcaj* from Class 1, *waanphêen* and *lûak* from Class 2, and *jùt* from Class 3, to be tested with Thai informants. Their English counterparts (i.e. *necessary*, *feel comfortable*, *plan*, *choose*, and *stop*) are commonly held as verbs taking infinitival adjuncts, infinitival complements, and experiential phrases, respectively. This pattern of presentation should be familiar to the general linguistic audience. The verb *liiklîaŋ* ‘avoid’ from Class 1 was also included as a confirmation for its co-occurrence with either infinitival clauses or experiential (nominal) phrases.

⁸ Dellinger (1975), Diller (2001), and Simpson (2001) consider *cà?* that optionally appears with modal auxiliaries such as *àat*, meaning ‘may/might’, to be a clitic (and regard *àat cà?* as a unitary form). Here, I extend the clitic status of *cà?* to the instance of it that co-occurs with *thîi*, a viable alternative, given that *cà?* is phonologically reduced when it is adjacent to a complementizer, while maintaining its association with hypothetical tense.

In Section 5, I will restate this hypothesis, in a slightly simplified version, without referring specifically to complement and adjunct notions.

4.2. Thai (Spanish-Based) Data

I obtained a Spanish corpus of subjunctives and indicatives, kindly supplied by Bob de Jonge (1998), who investigated Spanish indicatives and subjunctives by collecting examples from Gabriel García Márquez's (1994) 'Los funerales de la mamá grande'. In creating this Thai Spanish-based corpus, I utilized Spanish-Thai translation assistance from my research assistant, a Thai university student majoring in Spanish. My research assistant identified all thirty-three instances of subjunctives that were available in De Jonge's corpus and a number of indicatives, after which he conducted Spanish-Thai translation and English glosses. We obtained the relevant English translation of "Big Mama's Funeral" in "Collected Stories" by G. Rabassa & J.S. Bernstein (1999).

Spanish predicates taking subjunctives and indicatives are presented in 4.2.1 and 4.2.2, respectively.

4.2.1. Spanish subjunctives

Prior to examples of sentences containing subjunctives, the Spanish predicates and the number of times each predicate appears with subjunctives are indicated in De Jonge's corpus in Table 2. Percentage frequencies were arranged from the most to the least frequently occurring verb.

Table 2: Verbs Taking Subjunctives in De Jonge's Corpus

Class	Spanish verbs taking subjunctive complements	English Glosses	Frequency	Percent
1	rogar/mandar que	beg/ask	11	33.33
2	esperar que	expect/hope	6	18.18
3	decir que	say/tell	5	15.15
4	querer que	would like to	3	9.09
5	no pensar/creer que	not think/believe	3	9.09
6	no recordar que, suponer que, permitir que, agradecer que, buscar que (1 each)	not recall, suppose, let, thank, look for	5 (1 each)	15.15 (3.03 each)
	Total		33	100

According to the data in Table 1, subjunctive clauses were used frequently with the *rogar/mandar* (33%) Class, moderately with the *esperar* and *decir* Classes (18%, 15%) and rather minimally with the *querer/no pensar* Classes and the 6th Class (9%, and 3% each).

Sentences (14) and (15) below represent Classes 1 and 2 in Table 2. The original Spanish versions appear in (14a) and (15a), and the Thai translated versions appear in (14b) and (15b).

Class 1: rogar/mandar que

- (14) a. *Les recomendó que se protegieran la cabeza para*
 Them (he) recommended that (they) protect (past subjunctive) the head to
evitar la insolación.
 avoid the sunstroke
 b. *khǎw nê?nam hāj phûakkhǎw khlum sīsà phûa pōwŋkan lomdèet*
 He suggest COMP they cover head in order to protect sunstroke
 'He suggested that they cover their heads to guard against sunstroke.'

Class 2: esperar que

(15) a. *Su esposa esperaba que todo el pueblo asistiera al entierro*
His spouse(f.) hoped that all the town (would) attend (past subjunctive) to the funeral

b. *phanrayaa khǎw khâat wâa khon thâj mùubâan cà? maa rûam phíthii*
wife of he expect COMP people all village will come join service
fǎnsòp khǎw khâw
bury of he
'His wife was hoping that the whole town would attend the funeral.'

In (14a), *protegeran*, in the clausal complement of *recomendó*, is inflected for past subjunctive. In the Thai counterpart (14b), the subjunctive is marked by the clause marker *hâj*. Like in (14a), *asistiera* in (15a) is inflected for past subjunctive. In the Thai counterpart (15b), the subjunctive is marked by *wâa* and the presence of the modal auxiliary *cà?*, a prospective marker. As Thai does not use inflectional morphology, presumably, the past time reference is provided in the contexts of (14b) and (15b). Data in (14b) and (15b) suggest that, semantically, Thai subjunctives involve a desirable event/alternative relevant to the context, consistent with De Jonge's criterion. In addition to that, syntactically, *hâj* and *wâa* are used in association with the absence and presence of modal auxiliaries to mark subjunctive clauses in Thai.

Apart from the semantic and syntactic information revealed by this dataset, two other respects are noteworthy. On the one hand, this set of data suggests that subjunctives are likely with predicates of request and hope, which is expected as subjunctives typically express a desirable event. On the other, subjunctives can appear with predicates such as *agradecer* as well, despite its low frequency. This is quite unexpected as this predicate usually occurs with factive clauses.⁹ While De Jonge's criterion in the sense in which it has been interpreted may not be able to account for all instances of subjunctives, it is obvious that most of them convey a desirable event or an alternative relevant to the context.

In the tests conducted with Thai informants, I constructed sentences using *rogar/mandar*, *esperar*, *no pensar/creer* Classes. See Section 5, for detail on the distributions of these predicates and the corresponding Thai items.

4.2.2. Thai Counterparts of Spanish Indicatives

There are four Spanish indicative sentences selected from De Jonge's corpus. Based on De Jonge's data (Table 2, p.85), *decir que* and *creer que* appear as the most frequently used verbs in García Márquez's (1994), with 31 and 34 instances, respectively.

As mentioned earlier, my main goal was to examine hypothetical/subjunctive clauses; the test of indicatives here is merely a means through which subjunctives can be clearly identified. Therefore, a small number of indicatives were employed, compared to the subjunctives. Sentences (16a) and (17a) illustrate these sentences, followed by the Thai counterparts (16b) and (17b).

creer que

(16) a. *Creo que es la jaula más grande que he visto en mi vida*
(I) believe that (it) is the cage most big that (I) have seen in my life
b. *phǒm khít wâa pen kroj thîi jàj thîisùt thâw.thîi phǒm khǎj hěn maa*
I (msc) think COMP be cage COMP big most as I (msc) ever see dir prt¹⁰
'I think it's the biggest cage I've ever seen in my life.'

⁹ In De Jonge's (1998) instance of *agradecer*, the embedded clause also states fact. In this respect, the notion of subjunctives cannot be restricted to a desirable event/alternative but should be extended to fact.

¹⁰ Dir prt stands for directional particle. Thai has a fixed number of deictic or directional particles, including *maa* and *paj*, literally 'come' and 'go', which convey a sense of direction and/or perfective aspect. See Iwasaki and Ingkaphirom (2005) for detailed information.

decir que

- (17) a. *Ya te he dicho que me estoy volviendo loca*
 Already you (I) have told that (I) am becoming crazy
 b. *chán bǎək thǎə léew nǐi wǎa chán kamlaŋcà? pen bǎa*
 I tell you already top marker COMP I be going to be crazy¹¹
 ‘I’ve told you already that I’m going crazy.’

The indicative clausal complements are consistently introduced by *que* in Spanish and *wǎa* in Thai. In (16) *he visto* and *khǎəj* indicate perfective aspect; the presence of the perfective aspect in Spanish and Thai is triggered by the superlative phrase that is associated with the matrix verbs *creo* and *khít*. In (17), *estoy volviendo* and *kamlaŋcà?* indicate prospective aspect of certainty. This suggests that across Spanish and Thai, indicatives commonly co-occur with tense and/or aspect markers. The matrix predicate in (16) conveys present tense, which is unmarked in Thai; in (17), the matrix predicate is associated with the past tense marker *léew*, which is overt in this particular example.

Viewed from De Jonge’s criteria, the clausal complements convey an assertion of the matrix clause subject, not a desirable alternative, consistent with his indicative definition. In the hypothesis test (in Section 5), I will show results obtained from my application of *khǎəj* and *kamlaŋcà?* as diagnostics to a distinction between Thai indicatives and subjunctives.

4.3. Thai Clause Types and Markers

The constructed data and Spanish data, after having been compiled, revealed different clause types and markers. Tables 3 to 7 contain a summary of matrix predicates, markers, and the clauses that follow them, which were classified into three clause types: infinitive, subjunctive (purpose, imperative, past hypothetical, fact), and indicative.

4.3.1. Infinitive and Experiential Clauses

From my constructed data, *thǐi cà?* is obligatory with predicates such as *sabajcaj* and *tùuntên*, both of which can select an infinitival adjunct, while it is optional with predicates, such as *lûak*, which can take either an infinitival complement with *thǐi cà?* or the one without it. This is presented in more detail in Table 3. Here it is noteworthy that the subject in the infinitival adjuncts and complements can be assumed as PRO, a non-overt subject that has the referent identical to the matrix clause subject.

In Table 3, Thai infinitival and experiential clauses are presented on the basis of the matrix predicates, the clause markers with which they appear, and the presence and absence of tense and modal auxiliaries within their clausal domains.

Table 3: Thai infinitives and experiential clauses

Thai Matrix Predicates	Markers	Tense/Modal	English Glosses	Spanish Predicates
sabajcaj tùuntên lék kǎən kwǎa	thǐi cà? (obligatory)	non-overt	feel comfortable be excited too small to	N/A N/A fuera pequeña para
lûak	thǐi cà? (optional)		choose	N/A
lǎək	None		quit	N/A

Notes: Regarding N/A, the predicates *campen*, *sabajcaj*, *lûak*, and *lǎək* were obtained from my constructed data; Spanish counterparts are not applicable. I added *lék kǎən kwǎa*, the Thai counterpart of Spanish *fuera pequeña para*, from De Jonge’s dataset as it was likely to occur with *thǐi cà?* in a questionnaire with Thai informants. See Table 10 in Section 5.4.1.

¹¹ Top marker is the abbreviation for topic marker. The element *nǐi* is regarded a topic marker in the literature (e.g. Eknaiyom (1982) and Iwasaki and Ingkaphirom (2005)).

4.3.2. Thai Counterparts of Spanish Subjunctives

As discussed in 4.2.1., Spanish subjunctives are marked by the inflectional morphology, and, as De Jonge suggests, are desirable alternatives or events relevant to the contexts of the matrix predicates. In this Section, I will refer to four types of Thai subjunctive counterparts revealed by the translation. They are classified on the basis of clause markers, i.e. *phûa* (purpose), *hâj* (imperative), *wâa* (past hypothetical), and *thîi* (fact).¹² See Tables 4-7 for more detail. In the discussions of the individual clause types, the original Spanish sentences are given prior to the Thai corresponding sentences, for easy reference.

4.3.2.1. Purpose

The purpose clause was one of the major clause types found after the translation of the Spanish subjunctives. With the *buscar* Class in (18a) below, *que* marks the purpose clause and *desbarate* is inflected for the present subjunctive mood. In the Thai counterpart (18b), *phûa cà?* serves the same function. Presumably, the *phûa cà?* element, a compound of *phûa*, meaning “in order that” (cf. McFarland (1944)) and *cà?*, an irrealis particle, mark a clause expressing a purpose.¹³ The sentence becomes ungrammatical if the overt pronoun *khăw*, the subject of the embedded clause, is inserted between *phûa* and *cà?*, as in (18c). This suggests that the *phûa cà?* element cannot be a marker for a tensed clause.

- (18) a. *Se está buscando que le desbarate la cara.*
 (He) is looking that him (he) smashed (present subjunctive) the face.
 ‘He’s looking for me to smash his face in.’
 b. *khăw kamlaŋ taamhăa chăn phûa cà? maa hăa rûaŋ*
 He PROG chase I in order INF come for matter
 ‘He’s chasing after me in order to trouble me.’
 c. **khăw kamlaŋ taamhăa chăn phûa khăw cà? maa hăa rûaŋ*

Table 4 presents (18b), a Thai purpose clause, on the basis of the matrix predicate, the clause marker it appears with, and the presence and absence of tense and modal auxiliaries within its clausal domain.

Table 4: Thai Purpose Clauses

Matrix Predicates	Markers	Tense/Modal	English Glosses	Spanish Predicates
taamhăa	phûa cà?	non-overt	chased after in order to	buscar que

The data in Table 4 suggest that Thai purpose clauses are marked by *phûa*, compatible with English ‘in order to’. When *phûa cà?* is used (as in 18b), the matrix clause subject is agentive; the embedded clause subject is absent, enabling PRO to occupy this position.

4.3.2.2. Imperative

An imperative here refers to a clause selected by a verb expressing order, suggestion and desire. In Spanish (19a) and (20a), the matrix verb *dije* expresses an order resulting in the forms *quitaras* and *lleves*, inflected for past and present subjunctives respectively, in the clausal complements. In Thai (19b), the clausal complement is preceded by the matrix verb *bòk* and the marker *hâj* with an overt subject, in the absence of tense and modal

¹² *Hâj* is a multi-functional word; it can function as a main verb equivalent to ‘give’, a preposition ‘for’, or a complementizer (cf. Singhapreecha 2000). The clause marker *hâj* is usually addressed in relation to the causative construction, one in which the subject causes another event to come about. In a recent work by Iwasaki and Ingkaphirom (2005), *hâj* is considered a benefactive and purposive element which forms the class with other causative markers (i.e. *tham* and *thamhâj*). Inspired by Spanish subjunctive data, I associate it with imperatives, namely, clauses introduced by verbs of order, suggestion and desire. Therefore, I continue to discuss *hâj* in this sense.

¹³ Iwasaki & Ingkaphirom (2005) regard *phûa* as another benefactive and purposive marker in addition to *hâj*. They remark that *phûa* is different from *hâj* in that a clause introduced by *phûa* can precede the matrix clause, while a clause marked by *hâj* cannot. In the present study, I classify them as different markers. From the subjunctive perspective, the clause marked by *hâj* has an overt subject, while the ones marked by *phûa* and *phûa cà?* do not.

auxiliaries.¹⁴ Note that *bòk* can be a matrix verb introducing a reported statement. In (19), while the indication of reported speech remains, *bòk* has an additional sense of order; it takes a non-finite clause introduced by *hâj* as its complement. The non-finiteness of the clausal complement is confirmed by the ungrammaticality of (19c), which arises due to the presence *khâj*, a perfective aspect marker. Thus, a cluster of subjunctive-related properties in Thai entitles *thâ ?bòk.paj* to an imperative. Sentence (20b) is another example featuring *bòk* as conveying an order. In the matrix clause, past tense is overt via the perfective marker *léew*. The complementizer *wâa* precedes an imperative (associated with past tense via the matrix clause) and the embedded clause subject is not overtly expressed, but it is identical to the object of the matrix clause.

- (19) a. *Te dije que te quitaras.*
You (I) told that you (You) get.away (past subjunctive).
'I told you to get away.'
- b. *chân bòk hâj thâ ?bòk.paj*
I tell COMP you out.go
'I told you to get away.'
- c. **chân bòk hâj thâ khâj ?bòk.paj*
I tell COMP you PRF out.go
'I told you to have gone away.'
- (20) a. *Ya te dije que te la lleves.*
Already you (I) told that you it (you) (should) bring (present subjunctive).
'I told you already to take it away.'
- b. *chân bòk thâ léew wâa ?aw man paj hâjphôn*
I tell you perf COMP take it dir prt away
'I told you already to take it away.'

In Table 5, *bòk*, *wiŋwɔɔn*, *sàŋ*, *né?nam*, *jàak*, *rɔɔ*, as shown in the translations, take the marker *hâj*, which is required in the presence of overt subjects in the imperative clauses. The verb *bòk* appears with *wâa* and the matrix clause contains an overt object.¹⁵

¹⁴ In terms of the presence of a subject in the clausal complement of *hâj*, one crucial piece of evidence that supports the subject status involves its ability to be bound by a reflexive pronoun. See (19d) below. Note that the clausal complement remains infinitival, as it resists insertion of tense/aspect element.

(19) d. *Tan bòk hâj Teera_i tham raajŋaan dūaj tuakháween_i*
Tan tell COMP Teera do report by himself
'Tan told Teera to do the report by himself.'

In (19d), the reflexive *tuakháween* refers to *Teera*, the NP which is overtly expressed. The establishment of a binding relation between the reflexive pronoun and its antecedent in the same clausal domain entails that the NP *Teera* occupies the subject position of the infinitival clause, where *to* marks non-finiteness. I extend the status of subject in the infinitival clause in (19d) to NPs following the complementizer *hâj* in this respect.

¹⁵ In terms of matrix clause subjects, as Thai is a pro-drop language, pronominal subjects can be omitted if the information to their identification is available in the discourse context. Embedded clause subjects of the type under discussion are more restricted. For example, they are overt in *hâj* clauses and non-overt but take on the identities of matrix clause objects, if available, in *wâa* clauses. If an overt subject appears in a clause marked by *wâa*, as in (20c), the *wâa* clause becomes an indicative, as presented earlier in Section 4.2.2.

(20) c. *chân bòk thâ léew wâa khâw ?aw man paj*
I tell you perf COMP he take it dir prt
'I told you already that he took take it away.'

Table 5: Thai Imperative Clauses

Matrix Predicates	Markers	Tense/Modal	English Glosses	Spanish Predicates
bòok wɨŋwɔɔn sàŋ néŋnam jàak rɔɔ	hâj	non-overt	tell pray order suggest desire/want wait	decir que rogar/mandar que ordenar que recomendar que querer que esperar que
bòok	wâa	non-overt	tell overt object perf particle	decir que

4.3.2.3. Past Hypothetical

Matrix verbs of the *hope* and *believe/think* Class take subjunctives with overt subjects. Sentences (15) and (21) contain *esparabe* ‘hoped’ and *pensar* ‘think’, both of which co-occur with past subjunctive clauses marked by *aissstiera* and *fuera*, respectively.

(15) a. *Su esposa esperaba que todo el pueblo asistiera al entierro.*

His spouse(f.) hoped that all the town (would) attend (past subjunctive) to the funeral

b. *phanrayaa khǎw khâat wâa khon thâŋ mùubâan cà? maa rûam phîthii*
wife of he expect COMP people all village will come join service
fǎŋsòp khǎw khâw
bury of he

‘His wife was hoping that the whole town would attend the funeral.’

(21) a. *A nadie se le habia ocurrido pensar que la Mamá Grande fuera mortal.*

To nobody himself him had occurred to think that the Big Mama(f.) was (past subjunctive) mortal
‘It had not occurred to anyone to think that Big Mama was mortal.’

b. *mâjmiikhraj khâatkhít læj wâa Big Mama cà? taaj*
nobody expect at all COMP Big Mama will die
‘Nobody expected that Big Mama would die.’

To reiterate, the matrix predicates in Spanish (15a) and (21a) and Thai (15b) and (21b) take a clause denoting a hypothetical tense marked by the subjunctive form and *que* in Spanish, and the prospective modal *cà?* and *wâa* in Thai. In addition, in both Spanish and Thai, the subjects in the clausal complements are overt.

Table 6 presents Thai past hypothetical clauses on the basis of the matrix predicates, the clause markers with which they appear, and the presence of modal auxiliaries within their clausal domains.

Table 6: Thai Hypothetical Clauses

Matrix Predicates	Marker	Tense/Modal	English Glosses	Spanish Predicates
khâat	wâa	overt	hope/expect	esperar que
(mâjmiikhraj) khâatkhít		overt	(nobody) expect	nadie pensar que

4.3.2.4. Fact

In Spanish, a subjunctive is used to express non-assertion or fact. In (22a), *agradecer* takes a subjunctive clause; *disparen* is inflected for the present subjunctive mood, indicating the shooting event has happened. In Thai (22b), the matrix verb *khǎwkhun* takes an experiential clause introduced by *thii* and there is no overt subject in the clausal domain.¹⁶ Note that Spanish and Thai are different from English in that they use a clause to express the experiential sense, whereas English uses a gerundial phrase. As shown in the translation, in

¹⁶ While the subject of the clausal complement of (22b) is non-overt, it is not necessarily the case that the subject in this position must remain unexpressed in Thai. An option with an overt subject is also possible.

English, a constituent selected by predicates expressing fact (e.g. *thank*) is gerundial and is introduced by the preposition *for*.

- (22) a. *Tengo que agradecer que disparen dentro de mi casa.*
 (I) Have to thank that (they) shoot (present subjunctive) inside of my house.
 ‘I have to thank them for shooting in my house.’
- b. *chǎn tǒŋ khòɔpkhun phûakkhǎw thîi jĭŋ maa naj bâan chǎn*
 I have to thank them COMP shoot dir prt in house I
 ‘I have to thank them for shooting into my house.’

Table 7 presents Thai (factive) clauses on the basis of the matrix predicates, the clause markers with which they appear, and the presence and absence of tense and modal auxiliaries within their clausal domains.

Table 7: Thai factive clauses

Matrix Predicate	Marker	Tense/Modal	English Glosses	Spanish Predicate
khòɔpkhun	thîi	non-overt	thank	agradecer

4.3.3. Indicative

As discussed in 4.2.2, across Thai and Spanish, indicatives are marked by the presence of overt tense and aspect. To reiterate, in (16b) and (17b), the perfective marker *khəj* “ever” and the progressive marker *kamləŋca?* “be going to” appear in the clausal complements, which are introduced by *wāa*. Table 8 presents Thai indicatives on the basis of the matrix predicates, the clause markers with which they appear, and the presence and absence of tense and modal auxiliaries within their clausal domains.

Table 8: Thai indicative clauses

Matrix Predicate	Marker	Tense/Modal	English Glosses	Spanish Predicate
rúu	wāa	overt (optional)	know	saber que
chûa			believe	creer que

In the test sentences that I used to check Thai informants’ judgments, tense and modality were diagnostics of a distinction between subjunctives and indicatives.

4.4. Recaps of Thai Infinitives, Subjunctives, and Indicatives

Given the information presented in this section, I make the following observations which can initially be answers to the questions posed earlier in Section 3.2 regarding Thai matrix predicates, clauses and markers corresponding to those of Spanish.

Firstly, *thîi cà?* is obligatory with matrix predicates neutral to irrealis mood, optional with predicates that are inherently irrealis, and absent when matrix predicates require experiential clauses.

Secondly, the clause markers *hāj* and *wāa* resemble each other in one respect; they can appear with imperatives. Within this *hāj/wāa* imperative Class, one difference is that the subject of the clause marked by *hāj* is overt, whereas the subject of the clause marked by *wāa* (the instance that occurs with imperatives) is not overtly expressed. This results from the fact that the subject of the clause marked by *hāj* is different from the matrix clause subject, whereas the subject of the clause marked by *wāa* is identical to the object in the matrix clause.

Thirdly, *phûa cà?* is a marker introducing purpose clauses. This marker selects a null subject. The occurrence of *cà?* as part of *phûa cà?* and *thîi cà?* is particularly interesting. In addition to being inherently irrealis, it is associated with an agentive subject, one that is overt in the matrix clause and non-overt in the clausal complement or adjunct.

Finally, Thai uses *wāa* to mark both hypothetical and non-hypothetical clauses. In an imperative, *wāa* appears in the absence of a subject and a tense/modal element. In a past-hypothetical clause, it appears with an

overt subject and the presence or absence of a modal auxiliary. In a non-hypothetical (i.e. indicative) clause, it shows up in the presence of a subject and a tense/aspect marker or a modal auxiliary of certainty.

It can be seen that in Spanish, the morphology of subjunctive versus indicative is helpful to distinguish between hypothetical and non-hypothetical clauses. In Thai, as summarized above, other means are used such as clause markers and tense/aspect elements and modal auxiliaries. As Thai utilizes different syntactic devices from Spanish in expressing hypothetical and non-hypothetical clauses, I attempted to develop means that account for Thai infinitives, subjunctives and indicatives, by way of hypothesis tests.

5. Means to Account for Thai Infinitives, Subjunctives and Indicatives

On the basis of the data and the classifications discussed in Section 4, I formulated the following hypotheses.

5.1. Hypotheses

Hypothesis 1: There are certain matrix clause predicates that are inherently hypothetical and those that are neutral. The former do not require *thîi cà?*; the latter do. When neutral predicates select a hypothetical mood, *thîi cà?* must co-occur. Without *thîi cà?*, the sentences are ungrammatical. In addition, *thîi cà?* should be absent with experiential clauses.

Hypothesis 2: Imperative and purposive clauses (those introduced by *hâj* and *phûa cà?*) appear in the absence of tense and modal elements. With regard to the hypothetical past type, *khâat wâa* “expected that” takes a clause with the aspectual marker *cà?* (as shown in (15b)). Given that the modal *cà?* with a degree of certainty is allowed, a tense/aspect element indicating fact or a definitive sense appearing in the same clause would make the sentence ungrammatical.

Hypothesis 3: Thai matrix predicates with indicative clauses co-occur with perfective aspect or modal auxiliaries of strong intention. In this respect, this type of matrix predicates is unlikely with elements that suggest weak possibility or obligation.¹⁷

5.2. Development of Test Sentences in the Questionnaires

Using these hypotheses as a basis, I created test sentences based on the datasets in 4.1 and 4.2, and presented them in a series of questionnaires. These sentences included the target infinitives, subjunctives, and indicatives. I also added contexts to make the target clauses reasonable and natural.

Prior to the target sentences, in each questionnaire, there were instructions and example sentences, whose structures were different from those being investigated, as guidance for the participants. As a grammaticality judgment task, the respondents were asked to indicate their preferences using one of the three choices. Firstly, the sentence was grammatical (‘something you can say’ in the questionnaire). Secondly, the sentence was ungrammatical (‘something you cannot say’). Thirdly, the sentence would be grammatical if there were an adjustment; those who checked the third choice were asked to make corrections as they saw fit.¹⁸

There were two groups of test sentences across the infinitive, subjunctive, and indicative. Group 1 included those which were largely consistent in form with the translated versions. Table 9 illustrates how I developed a test sentence of this type. It features the *esperar* Class (cf. Table 2, Section 4.2.1) shown in the original Spanish version.

In (15a), the matrix predicate *esperaba* takes a subjunctive clause indicated by the inflected form *asistiera*. In a parallel fashion with (15a), in (15b) the matrix predicate *khâat* takes an irrealis clause marked by *wâa* and the prospective modal *cà?*. I created sentences such as (15b) along with the context (in Thai) to test the second hypothesis.

¹⁷ As mentioned earlier, I extended my investigation to indicatives to ensure that the generalization that applies to subjunctives is restricted to subjunctives (and not indicatives).

¹⁸ As the text in the questionnaires was written in Thai, it was not appended to this paper, but I summarized the results and gave examples to clarify points that require original Thai sentences in Section 5.

Table 9: Construction of Test Sentences

Original	(15a) Su esposa esperaba que todo el pueblo asistiera al entierro.
Gloss	His spouse(f.) hoped that all the town (would) attend (past subjunctive) to the funeral.
Translation	His wife was hoping that the whole town would attend the funeral.
Context	Village chief Thep, who died, was a nice person. He made great contributions to the village.
Test item	(15b) phanrayaa khǒɔŋ khǎw khâat wâa khon cà? maa rûam ɲaansòp thǎŋ mùubâan
Gloss	wife of he expect COMP people will come join funeral all village
Translation	His wife expected that all the villagers would attend his funeral.

Group 2, a diagnostic group, targeted a missing clause marker for infinitives or an inappropriate tense/aspect or a modal auxiliary for subjunctives or indicatives. Specifically, in infinitives, either *cà?* or *thîi cà?* was omitted. In the subjunctive, diagnostic sentences were those with a tense marker, e.g. a perfective element. In the indicative, diagnostic sentences contained the modal auxiliary of a certain degree of possibility or obligation. These imperfections were expected to trigger the insertion of *thîi cà?* in infinitives, deletion of the tense marker for subjunctives, and deletion of the modal auxiliary of possibility (or replacement of it with the modal auxiliary of a stronger possibility or obligation) for indicatives. Thus, I used both grammatical (group 1) and ungrammatical (group 2) sentences to confirm the grammaticality of the new Thai Spanish-based data and the three hypotheses.

5.3. Thai Informants

Different groups of Thai informants consisting of undergraduate, graduate students, and faculty members, all of whom were affiliated with a public university in Bangkok, responded to four questionnaires. The undergraduate students were enrolled in a fundamental English course during their first year. The graduate students, who were EFL teachers or prospective practitioners, were studying in a Master's degree program in their first and second years. As for faculty members, the average age was 34, and one among the group was a linguist. All the faculty members shared an enthusiasm for foreign language teaching.

All of the informants spoke Thai as their first language. As varying numbers of informants responded to different questionnaires, the varying numbers will be reported in accordance with the given questionnaires. Per cent results (to be reported in Section 5.5) will also display the numbers of respondents.

5.4. Materials

Four questionnaires were distributed in 2012 and 2013. The first questionnaire was administered in March, 2012. Having checked and adjusted certain items on the first questionnaire, I conducted the second and third questionnaires in October, 2012 and the last one in December, 2013. Various groups of student informants participated during the two-year period, while most of the faculty informants remained the same. Details about the test items and procedure follow.

5.4.1. Questionnaire 1

A total of eighty-six informants participated, including eighty-one undergraduate first year students and five faculty members. The questionnaire comprised ten sentences including the infinitive, subjunctive, and indicative as shown in Table 10. Note that the numbers in the parentheses correspond to the numbers in the questionnaire.

Table 10: Matrix predicates and clause types in questionnaire 1

Matrix Predicates	English Glosses	Clause Types	Resource
māj campen (1) sabajcaj (2) māj mii thaaj (7) lék kəən kwāa (8) māj jāak (10)	not necessary feel comfortable no way too small to not difficult	Infinitive	DJ CONSTR DJ/DIAG DJ CONSTR/DIAG
khâat (with aspect <i>māj ləaj</i>) (9) khǎo (4) néʔnam (5) roo (6)	expect/hope (with aspect <i>not at all</i>) ask recommend wait	Subjunctive	DIAG DJ DJ DJ
camdāj (3)	remember/recall	Indicative	DJ

Note. DJ, CONSTR, DIAG indicate original resources of the relevant items, namely De Jonge's, my constructed data, and items used as diagnostics, respectively.

5.4.2. Questionnaires 2 and 3

Questionnaire 2 was distributed in October, 2012. There were one hundred and four respondents in total, consisting of seventy-one first year undergraduate and thirty-three first year Master's degree students. See Table 11 for the ten matrix predicates categorized by clause types in this questionnaire. Item (9), a diagnosis, remains the same across questionnaires 1 and 2.

Table 11: Matrix predicates and clause types in questionnaire 2

Matrix Predicates	English Glosses	Clause Types	Resource
liikliaj (1) waajphəen (6) lúak (7) tùuntên (10)	avoid plan choose be excited	Infinitive	CONSTR
sôm pratuu (2) lót kaan cháj phalaŋŋaan (5) taamhăa (8) khâat (with aspect <i>māj ləaj</i>) (9)	fix the door reduce energy consumption chase after expect/hope (with aspect <i>not at all</i>)	Subjunctive	DJ DJ DJ DIAG
rúu (3) jaj thîi sùt (without <i>khəaj</i>) (4)	know the biggest (cage) (without ever)	Indicative	DJ DIAG

Questionnaire 3 was distributed two days after questionnaire 2. A group of thirty second-year Master's degree students responded to the questionnaire.

The aim of conducting questionnaire 3 was to confirm the co-occurrences among the matrix predicates, clause markers, and the tense and modal elements found in the results from questionnaires 1 and 2. In particular, the indicative clause type was of concern here. As shown in Table 12, I replaced three items with the new 2, 5, and 10 as diagnostics to determine if indicative clauses would resist modal auxiliaries of possibility and obligation.

Table 12: Matrix predicates and clause types in questionnaire 3

Matrix Predicates	English Glosses	Clause Types	Resource
rúu (with modal <i>khuan</i>) (2)	know (with <i>ought to</i>)	Indicative	DIAG
jàj thîi sùt with <i>khəəj</i> (4)	the biggest (cage) that		DJ
rúu with modal <i>ʔàat càʔ</i> (5)	know (with <i>might</i>)		DIAG
chua waa (with modal <i>khuan</i>) (10)	believe (with <i>should</i>)		DIAG

5.4.3. Questionnaire 4

Questionnaire 4 was distributed in December, 2013 to check whether *thîi càʔ* would occur in the context of a matrix predicate which selects an experiential clause. There were seven items: three targets and four fillers. Three target matrix predicates *liiklîaŋ*, *lăək* and *jùt* corresponding to sentences (1), (3) and (6) in the questionnaire, appear in Table 13 below. Sentences (1) and (3) were used to confirm the absence of *thîi càʔ*; sentence (6), a diagnostic, checked if the informants would allow *thîi càʔ* in the experiential context.

Table 13: Matrix predicates and clause types in questionnaire 4

Matrix Predicates	English Glosses	Clause Types	Resource
<i>liiklîaŋ</i> (1)	avoid	Experiential	CONSTR
<i>lăək</i> (3)	quit		CONSTR
<i>jùt thîi càʔ</i> (6)	stop to		DIAG

Ninety-five first year undergraduate students, four Master's degree students and four faculty members responded to this questionnaire. Results will be reported in Section 5.5.1.

5.5. Results from hypothesis test

Results from grammaticality judgments of the Thai informants are reported hypothesis by hypothesis. Each hypothesis is restated for easy reference.

5.5.1. Results for hypothesis 1

It was hypothesized that certain matrix predicates which are inherently hypothetical do not require *thîi càʔ*, while those that are hypothetically neutral do. When neutral predicates select a hypothetical mood, *thîi càʔ* must co-occur. Without *thîi càʔ*, the sentences are ungrammatical. In addition, *thîi càʔ* should be absent in experiential clauses.

In response to the first hypothesis, three tables are presented. Tables 13.1 and 13.2 report the informants' judgments of matrix predicates with and without *thîi càʔ*. Table 13.3 reports judgments of matrix predicates with experiential clauses.

5.5.1.1. Judgments of matrix predicates with and without *thîi càʔ*

Consider percent results in Tables 13.1 and 13.2. Items 1-5 are those requiring *thîi càʔ*; item 6 does not (cf. Table 1 in Section 4.1). Per cent results from Table 13 suggest that the presence of *thîi càʔ* with these predicates is highly acceptable. Eighty-eight to ninety-eight percent of the respondents accepted them with *thîi càʔ*.¹⁹

¹⁹ On item 4 *lêk kəən kwàa*, twelve percent of the informants either did not respond or indicated that the sentence was ungrammatical. According to informants' suggestion, *lêk kəən kwàa* sounds unnatural; *paj*, a directional particle, should replace *kwàa*, a degree particle meaning 'more than'.

Table 13.1: Judgments of matrix predicates with *thũi cà?* clauses

	Matrix Predicates	Glosses	Grammatical	Others	N
1	sabajcaj	feel comfortable	98%	2%	86
2	tuuntên	be excited	95%	5%	104
3	mâj campen	unnecessary	92%	8%	86
4	lêk kœn kwàa	too small to	88%	12%	86
5	liiklîang	avoid	95%	5%	134
6	waanphœen	plan	93%	7%	134

In Table 13.2, three items featuring the omission of *thũi cà?* were tested. Based on Table 1, the first and the second items require *thũi cà?*; the third one does not. Results reveal that the first two were preferred with *thũi cà?*; *thũi cà?* was an option with the last item.

Table 13.2: Judgments of matrix predicates without *thũi cà?* clauses

	Matrix Predicates	Glosses	Gram	Thũi cà?	Other	N
1	mâj mii thaaj	no way	37%	44%	19%	86
2	mâj jâak	not difficult	31%	40%	29%	86
3	lûak	choose	72%	5%	23%	134

As shown in Table 13.2, the results on *mâj mii thaaj* and *mâj jâak* were similar. A substantial number of informants (44% and 40%) indicated their preference for the insertion of *thũi cà?*. A slightly lower number (37% and 31%) accepted them without *thũi cà?*. It is noticeable that the percentages of the preference of *thũi cà?* were relatively low, which was unexpected. This might involve the fact that only *thũi* or *cà?*, not both, was missing in item 2 and item 1 sentences. When a reduced form was present, it was likely that Thai speakers were able to accept it.²⁰

With regard to item 2, within the 29% of responses, most indicated that the sentence was ungrammatical, suggesting that the omission of *thũi* was less acceptable, compared to the omission of *cà?* in item 1.

Results on item 3 were on target, with 72 percent of respondents accepting the version without *thũi cà?* and only 5% recommending the insertion of *thũi cà?*.²¹ This supports the optionality for *thũi cà?* with a predicate that has an implicit irrealis mood. Note that the absence of *thũi cà?* (chosen by 72%) results in a serial verb phrase, *lûak paj prathêet*, which can be translated as ‘a choice of going to a country...’ Thai is well known as a language with serial verb constructions; thus, the preference for this alternative is not surprising.

5.5.1.2. Judgments of matrix predicates with experiential clauses

Before presenting percent results on the three predicates, it is useful to consider the contexts that introduce the experiential clauses. The three sentences (23), (24), and (25) below correspond to numbers 1, 3, and 6 in questionnaire 4. In the context for (23), Nipa was aware of the person involved in the corruption of the construction of a new building and a journalist contacted her for an interview. For her own security, she avoided the interview, as (23) illustrates.

²⁰ Sentences (i) and (ii) illustrate reduced forms of *thũi cà?*. In (i) *cà?* that is expected to appear with *thũi* is omitted; in (ii), *thũi* that is expected to co-occur with *cà?* is omitted.

(i) *raw khít waa mâjmiithaaj thũi rúu phôn.sòp.samphâat phajnaj wannîi*
I think COMP no way COMP know result exam interview within today
‘I think there is no way that we will know the interview exam results today.’

(ii) *maj jâak cà? lûak khamtòp thũi thùuk*
not difficult INF choose answer COMP correct
‘It is not difficult to choose the correct answers.’

²¹ Within the remaining 23%, most (21%) indicated the sentence was ungrammatical. In the absence of informants’ suggestions, this ungrammaticality might involve extraneous, uncontrolled factors.

- (23) *Nipa cuṇṇ līklīaṇ kaan hāj sāmphāat*
 Nipa therefore avoid NMLZ give interview
 ‘Nipa, therefore, avoided giving the interview.’

In the context for (24), Saksit had a health checkup. A black spot was found in the lung, a likely result from his smoking for years. Sentence (24) follows.

- (24) *mɔɔ cuṇṇ nēṇnam hāj Saksit lāək sùup burii*
 Doctor therefore recommend COMP Saksit quit smoking
 ‘The doctor, therefore, recommended that Saksit quit smoking.’

In the situation of (25), Thawat is aware of his high cholesterol level. Sentence (25), where *thīi cà?* was expected to cause ungrammaticality, follows.

- (25) *khāw cuṇṇ jùt thīi cà? kin ṇaahāan thīi mii khājman sūuṇ chēn kàjthōt doonát khék*
 He therefore stop COMP INF eat food COMP has fat high such as fried.chicken donuts cake
 ‘He, therefore, stops to eat food high in fat such as fried chicken, donuts, and cake.’

Here I expected that (25) would be largely judged ungrammatical, on the basis that eating food high in fat could be regarded as habitual, experiential, and as a consequence, would be a mismatch with *thīi cà?*, an indication of irrealis.²²

Table 13.3: Judgments of matrix predicates with experiential clauses

	Matrix Predicates	Glosses	Grammatical	Others	N
1	<i>līklīaṇ</i>	avoid	95%	5%	103
2	<i>lāək</i>	quit	99%	1%	103

The results for both were largely uniform. Ninety-five to ninety-nine percent of the respondents accepted them without *thīi cà?*. Within the remaining group, four informants did not accept sentence (23), and one suggested that the nominalizer *kaan* be replaced by *thīi cà?*. It could be the case that in (23) the presence of the nominalizer *kaan* indicates a strong sense of formality, compared to the version with *thīi cà?*, a more natural one (despite its different sense), as suggested by the informant. With regard to *lāək*, the remaining percentage came from a missing response.

As for *jùt thīi cà?* in (25), the judgments of the undergraduate students were inconsistent with those of the faculty and graduate students. Only thirty-two percent of the younger group indicated that *thīi cà?* should be left out, while sixty-eight percent accepted it. The result from the younger group, which was unexpected, was interesting. Having interviewed a few undergraduate students on why they allowed *thīi cà?*, I was informed that the versions with and without *thīi cà?* were roughly the same. While addressing a similarity, they remarked that when *thīi cà?* appeared with *jùt*, there was a gradual decline before the stop of the eating of high-fat foods, whereas *jùt* without *thīi cà?* indicated a sudden stop. The presence of *thīi cà?* here might be another hypothetical sense as it can prolong the activity, which is supposed to be sudden, to take up time in the future.

It is noteworthy that these students unanimously accepted the absence of *thīi cà?* in (23) and (24). Thus, while *thīi cà?* is commonly absent, it is not entirely impossible in experiential clauses. Compared to English *stop*, which cannot take a hypothetical clause, the Thai counterpart *jùt* can, with a gradual decline in an activity as the young informants remarked.

Given that the presence of *thīi cà?* with this Class of verbs maintains a hypothetical reading, it can be concluded that the first hypothesis was confirmed. Thus, a three-way distinction can be established among predicates neutral to irrealis but select hypothetical clauses (*thīi cà?* present), those inherently irrealis (*thīi cà?* optional), and those taking experiential clauses exclusively (*thīi cà?* absent).

²² As cautioned earlier regarding the acceptability of (13a), ending the long period of a habit may involve a gradual decline; therefore, acceptability of (25) might arise in this respect.

5.5.2. Results for hypothesis 2

It was hypothesized that imperative and purposive clauses appear in the absence of tense and modal elements. With regard to the hypothetical past type, given that the modal *cà?* with a degree of certainty is allowed, a tense/aspect element indicating fact or a definitive sense appearing in the same clause would make the sentence ungrammatical.

Prior to discussing the results in response to the prediction, it is important that we confirm the acceptability of the Thai (Spanish-based) subjunctives. Tables 14.1 and 14.2 below show percentages of judgments of items with the clause markers *hâj*, *phûa*, and *phûa cà?* along with their matrix predicates.

Table 14.1: Judgments of matrix predicates with *hâj* and *phûa* clauses

	Matrix Predicates	Glosses	Grammatical	Others	N
1	né?nam <i>hâj</i>	recommend	90%	10%	86
2	รอ <i>hâj</i>	wait	60%	40%	86
3	lót kaan chá? phalaŋŋaan <i>phûa</i>	reduce energy consumption	100%	-	134
4	taamhăa <i>phûa cà?</i>	chase after	72%	28%	134

In Table 14.1, items 1-2 target *hâj* and the non-overt tense and modality. Ninety and sixty percent of the respondents agreed with the sentences. Within the remaining 40%, 23% rejected the sentence and 17% indicated their preference for *phûa hâj*, a compound of *phûa* and *hâj*, which marks a purpose clause with an overt subject. Items 3-4 target *phûa* and *phûa cà?*. Item 3 was completely acceptable to all the informants. Item 4 was accepted by a lower percentage (72%). A number of respondents in the remaining 28% suggested the insertion of *thîi* between *phûa* and *cà?*.²³

Table 14.2: Judgments of matrix predicates without *hâj* clauses

	Matrix Predicates	Glosses	Grammatical	<i>hâj</i>	Others	N
1.	khăo	ask	20%	62%	18%	86
2.	sôm pratuu <i>phûa</i>	fix the door	24%	54%	22%	104

In Table 14.2, items 1 and 2 target an omission of *hâj*. Both suggest a strong preference for *hâj*, with 62% and 54% of the respondents indicating this choice. A much smaller number (20% and 24%) accepted them without *hâj*. These informants must have understood them, given that the sentences were contextualized.

This part of the results confirms that imperatives/purpose clauses are introduced by *hâj* and *phûa* or *phûa cà?*, respectively and these clauses co-occur with the Class of matrix predicates, suggested by De Jonge's corpus.

The part in relation to the prediction is presented in Table 15.

Table 15: Judgments of (past) hypothetical with tense/aspect markers

	Thai Predicates	Glosses	Grammatical	Ungrammatical	Others	N
1.	khâat wăa (with aspect <i>mâj lăj</i>)	expect (with <i>not at all</i>)	52%	24%	24%	104
2	khâat wăa (with modal <i>cà?</i>)	expect (with <i>will</i>)	80%	7%	13%	86

Item 1 predicate *khâat* was predicted not to occur with *mâj lăj*, an aspectual particle conveying certainty, compatible with fact in this particular context. See the actual test sentence in (26). In this situation, a man told his wife that he had thought about stealing snooker balls in a club, not the money for the reason in (26).

(26) *khaw khâat wăa mâj mii ɲən năj línchák tó? lăj*

He expect COMP not have money in drawer table at all

'He expected that there would not be any money in the drawer.'

²³ The clause marker *phûa thîi cà?* is another alternative of *phûa cà?*. As mentioned in 3.2, the additional specificity reading and implication of formality applies when *phûa thîi cà?* is used.

Results from item 1 in Table 15 indicated that 52% of the respondents accepted (26). Twenty-four percent rejected this sentence and the majority of the rest preferred *khít* “think”, a predicate taking indicatives by Spanish standards. Given the results here, the aspectual particle *māj* *ləəj* may appear with *khâat*. This was quite inconsistent with the hypothesis, which predicted *khâat* to resist an element with a definitive sense. Notwithstanding acceptance, there were respondents who disagreed with this option and those who preferred *khít*, which typically takes indicatives, a match for this particle.

Results from item 2 in Table 15 were unproblematic; when *khâat* appears with *cà?*, a modal of future expectation, a considerable number of respondents (80%) accepted it. In the remaining responses (20%), the informants made a variety of suggestions: most of them (six from eight) preferred other predicates and modals of possibility.

Based on the results from Tables 14 and 15, Thai (Spanish-based) constructions featuring imperative, purposive, and past-hypothetical subjunctives are moderately to highly acceptable. In terms of the diagnostic test with a particle denoting certainty/fact, a mixed result was found. With a future expectation modal, the subjunctive was unproblematic. Thus, hypothesis 2 is largely confirmed.

5.5.3. Results for Hypothesis 3

It was hypothesized that matrix predicates with indicative clauses co-occur with perfective aspect and modal auxiliary of strong intention. This Class of matrix predicates is predicted to be unlikely with elements that suggest weak possibility or obligation.²⁴

Prior to confirming the hypothesis, I present Table 16 to confirm that Thai *rúu* behaves like their Spanish counterpart *saber*.

Table 16: Judgments of matrix predicates with indicatives

	Matrix Predicates	Glosses	Grammatical	Ungrammatical	N
1	<i>rúu wâa</i> (with <i>jùu</i>)	know (with continuative marker <i>jùu</i>)	89%	11%	134

As expected, eighty-nine percent of the informants accepted the indicative clause (marked by *wâa*) with *rúu* as the matrix verb. The test sentence includes a progressive/continuative marker *jùu* in the clausal complement. In this context, a girl named Joy saw a blind man reading a book in the library. Interested in the blind man, she walked towards him. The test sentence follows as in (27).

- (27) *Joy rúusùk wâa khontaabòt rúu wâa thəə mɔɔŋ khǎw jùu*
 Joy feel COMP man.blind know COMP she look at he cont.prt
 ‘Joy felt that the blind man knew that she was looking at him.’

Eleven percent of the respondents judged (27) as ungrammatical. This might involve the use of similar verbs *rúusùk* as the matrix clause and *rúu* as the embedded clause verb, resulting in slight complexity and unnaturalness.

Turning to the part in relation to the hypothesis test, I used elements that were likely to occur in indicatives, i.e. *khəəj* “used to/ever”, and unlikely, i.e. *khuan cà?* “should/ought to” and *ʔàatcà?* “apt to/may/might” as diagnostic tools. The presence/absence of *khəəj* was used to check if it was necessary, as (28) shows. In one version, *khəəj* was present along with a superlative element (i.e. an indicative-related element) and in another version, it was absent. In this situation, a woman named Nipa raised many birds and wanted a very big cage so she asked Yot to build one. Her friend, Pim, saw the bird cage that Yot built. The test sentence follows.

- (28) *thəə khít wâa man pen kroy thîi jàj.thîi.sùt thǎw thîi thəə (khəəj) hén maa*
 She think COMP it be cage COMP biggest as COMP she (ever) see dir prt
 ‘She thought that it was the biggest (bird) cage that she had ever seen.’

²⁴ As mentioned earlier, I extended my investigation to indicatives to ensure that the generalization that applies to subjunctives is restricted to subjunctives (and not indicatives).

The results in relation to the hypothesis appear in Table 17. Note that I added a closer (superlative adjectival) predicate to the perfective marker, *i.e.* *jàj.thîi.sùt*, as well as this element commonly co-occurs with experiential elements.

Table 17: Judgments of tense marker with indicatives

	Matrix Predicates	Glosses	khəj	Grammatical	Others	N
1	khít (with <i>jàj.thîi.sùt</i>)	think (with <i>biggest</i>)	present	90%	10%	30
2			absent	60%	40%	134

Results from Table 17 revealed that when *khəj* is present, 90% of the respondents accepted the sentence; the remaining 10 % indicated it was ungrammatical. When *khəj* is absent, 60% of the respondents accepted it. Of the remaining 40%, 30% indicated the addition of *khəj*. This side was unexpected; however, this might involve the fact that the context and the sentence meaning were clear enough for the informants to understand without the presence of the perfective marker.

Although the two sides of this check are somewhat inconsistent, it can be concluded that the presence of perfective markers with indicative predicates is preferable.

With regard to the test of whether or not modal auxiliaries of possibility and obligation can occur with predicates taking indicatives, I used a set of three sentences. The relevant matrix predicates and modals appear in Table 18. To reiterate, it was predicted that if the matrix verb takes an indicative, a modal auxiliary of weak possibility or obligation would not co-occur; an alternative would be a modal element of a stronger sense or none at all.

In respect of the semantics of modal auxiliaries, certain modal elements are ambiguous, having *epistemic* and *root* renditions. An *epistemic* reading is concerned with the speaker's attitude about the probability, possibility and certainty, while a *root* reading involves the will, obligation, permission, or ability of the sentential subject (cf. Lyons 1977, Cinque 1999, Barbiers 2006, Stowell 2018, among others). The epistemic versus root readings affect the hypothesis test in the results in Table 18.

Table 18: Judgments of predicates taking indicatives with modals

	Thai Predicates	Glosses	Modals	Glosses	Modal Type	Gram	Others	N
1	rúu	know	ʔàatcàʔ	may	root	97%	3%	30
2	chûa	believe	khuancaʔ	should	epistemic	80%	20%	30
3	rúu	know	khuancaʔ	should	root/epistemic	57%	43%	30

The test sentences corresponding to items 1 and 3 are shown below in (29) and (30). Sentence (29a) presents the situation. The part to be judged appears in (29b).

- (29) a. *khôw sòp phaasā ʔangkrit maj jāak jāang thîi khít jāang rajkô taam*
 Exam paper language English not difficult as COMP thought irrespective of that
 'The English language exam paper was not as difficult as (he) had expected yet...'
 b. *Khet rúu wāa khāw ʔàatcàʔ thamphìt paj baang khôw phrôwʔ ʔàan kham sàŋ māj.dii*
 Khet know COMP he may make mistake dir prt some item because read instructions not.good
 'Khet knew that he may have made some mistakes because he didn't read the instructions carefully.'

In (29), the modal auxiliary *ʔàatcàʔ* can be considered *root*, rather than *epistemic*. The embedded clause subject is identical to the matrix clause subject; the modal auxiliary *ʔàatcàʔ* refers to the sentential subject's, *i.e.* Khet's probability to have made mistakes, not the speaker's (of the sentence) conception of Khet's probability. According to the results, sentence (29) was accepted by almost all of the informants (97%), suggesting that root modals of probability can occur with *rúu*. This is conceivable, despite its inconsistency with the hypothesis, which was broadly stated, as a person's evaluation of his/her performance can vary in degree of achievement.

Item (3), corresponding to sentence (30) below, exhibits an epistemic modal. In the situation of (30), Nipa likes seeing movies at movie festivals. A movie festival is going to be held in Pattaya. Thani is Nipa's close friend. The test sentence follows.

- (30) *Thani ríuu wâa nîpha khuancà? paj duu năng naj thétakaan.năŋ thîi Pattaya*
 Thani know COMP Nîpa should go see movies in festival.movie at Pattaya
 ‘Thani knows that Nîpa should go to see the movies at the movie festival in Pattaya.’

In (30), while the subject of the embedded clause (Nîpa) is different from the subject of the matrix clause (Thani), it is likely that Nîpa herself has the obligation to see the movies (in a root sense) or someone such as Thani or the speaker imposes it on her (in an epistemic sense).

In the results, 57% of the respondents accepted sentence (30). Most of the remaining informants (43%) suggested deletion of *khuān*, replacement of the matrix predicate with *khit* ‘think’, and replacement of *khuān cà?* with *tǎwŋ* ‘must’, all of which suggest either a weaker sense of conception/realization in the matrix predicate or a stronger modal of obligation/intention. Although the majority was able to accept this sentence, a substantial number preferred the pattern that is consistent with the hypothesis (i.e. predicates taking indicatives are more likely with modals of strong possibility/or obligation than weaker ones.)

As for item 2, the matrix clause subject is different from the embedded clause subject, enabling an epistemic reading. Unlike the results for item 3, the results for item 2 showed a majority of acceptance (80%). Sentence (31) corresponding to this item is shown below. Sentence (31a) presents the situation. The part to be judged appears in (31b).

- (31) a. *Nit mâj sabaaj jùu lăaj wan jàaŋraj kǎtāam*
 Nit not well cont.prt several day irrespective of that
 ‘Nit has been sick for several days, yet ...’
 b. *mêe kǎwŋ nit chuā wâa mûa.thuŋg wan sǎw thǎa khuancà? paj sǎw dāj*
 Mother of Nit believe COMP when.reach day.exam she should go take exam able
 ‘Nit’s mother believes that she should be able to take the exam by the exam date.’

The remaining informants (20%) either suggested deletion of *khuān* or indicated that it was ungrammatical. Again, there is a tendency, although the number of informants was smaller than the one responding to item 3, for the unlikely co-occurrence of predicates taking indicatives and this epistemic modal.

Overall, hypothesis 3 was partially confirmed. The part in relation to the presence of overt tense with predicates taking indicatives was consistent with the hypothesis. With regard to the prediction about the co-occurrences of predicates taking indicatives and modals of strong possibility/obligation, there was a tendency, but the prediction was not confirmed.

With regard to root modals, if the subject of the indicative clause evaluates his/her own performance or imposes an obligation on himself/herself, modals of weak obligation such as *ǎatcà?* are allowed. Epistemic modals of moderate sense of obligation such as *khuancà?* are possible with predicates of perception such as *ríuu* and *chuā*. Presumably, the speaker or the subject of the matrix clause, when deducing his/her evaluation from the context, can opt for a fair amount of judgment/obligation, rather than certainty, in expressing a comment in the clausal complement.

6. Conclusion and Remarks

This study investigates hypothetical clauses in Thai using resources from a pre-existing database and translated data from a Spanish corpus. I introduced a wide view of clauses in Thai by bringing up two complementizers: *wâa* and *thîi*. These complementizers behave differently, marking assertion and non-assertion/facts. Next, I introduced an infinitive marker *thîi cà?*, which does not convey non-assertion but rather a hypothetical tense. I pointed out that the *thîi* element in *thîi cà?* has lost its factual sense and serves as a marker for subordination, parallel to the Spanish complementizer *que*, which shows up across indicatives and subjunctives. I illustrated my constructed database and De Jonge’s Spanish corpus, which were classified into infinitives, subjunctives, and indicatives. Based on these data, I developed three hypotheses as a means to distinguish between hypothetical and non-hypothetical clauses in Thai. Hypothesis 1 is concerned with the obligatoriness and optionality of *thîi cà?* in Thai infinitives and its absence in experiential clauses. Hypothesis 2 addresses the absence of modal elements in imperative and purposive clauses, and the unlikely presence of a definitive element with a matrix predicate denoting expectation. Hypothesis 3 involves the presence of tense/aspect markers with predicates taking indicatives and the unlikely presence of modals of weak possibility with this

type of predicates. Hypotheses 1 and 2 were largely confirmed. It is worth noting that the presence of *thūi cà?* with experiential clauses implies a slight delay of the involved activity, suggesting an integration of hypothetical mood into experience. Hypothesis 3 was not confirmed by modals but tense/aspect markers. Across root and epistemic modals, a sense weaker than certainty was possible with predicates taking indicatives. This finding suggests that the comment expressed in a clausal complement is not restricted by the strong sense of the matrix predicate. In all, this study reveals information crucial to the understanding of non-finite structures in Thai. The datasets and generalizations presented in this study are to be taken into consideration in future analyses of hypothetical and non-hypothetical clauses in Thai and beyond.

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